

IN THE CLAIMS

Please amend claims 1, 31, and 45 as follows;

Please cancel claims 7 and 65-83 without prejudice; and

Please add new claims 85-89 as follows.

1. (currently amended) A method comprising:
loading a microelectromechanical device into a chamber;
preparing a cleaning agent comprising ozone gas; and
introducing the prepared cleaning agent into the chamber for cleaning a surface of the microelectromechanical device in the chamber, wherein the temperature of the chamber is between 100 °C and 200 °C; and
~~wherein the method is performed in the absence of an application of ultraviolet light.~~
2. (previously presented) The method of claim 1, wherein the step of preparing the cleaning agent further comprises:
mixing ozone gas with an oxygen-containing co-agent that is water vapor.
3. (previously presented) The method of claim 1, wherein the step of preparing the cleaning agent further comprises:
mixing ozone gas with an oxygen-containing co-agent that is hydrogen peroxide vapor.
4. (previously presented) The method of claim 1, wherein the step of preparing the cleaning agent further comprises:
mixing ozone gas with an oxygen-containing co-agent that is acetic acid vapor.
5. (original) The method of claim 1, wherein the step of preparing the cleaning agent further comprises:
mixing ozone gas with one or more oxygen-containing co-agents selected from a group

comprising water vapor, hydrogen peroxide vapor and acetic acid vapor.

6. (original) The method of claim 1, wherein the temperature of the chamber is between 40 °C and 400 °C.

7. (cancelled)

8. (original) The method of claim 1, wherein the pressure inside the chamber is between 1 Torr and 5000 Torr.

9. (previously presented) The method of claim 1, further comprising:
after the step of introducing the prepared cleaning agent into the chamber,
preparing a coating agent; and
introducing the coating agent into the chamber for coating the surface of the
microelectromechanical device.

10. (previously presented) The method of claim 9, further comprising:
pumping out the chamber before introducing the coating agent into the chamber.

11. (previously presented) The method of claim 9, wherein the step of preparing the coating agent further comprises:

preparing the coating agent such that after introducing the agent into the chamber, the agent forms a coating layer that is chemically bonded to the surface of the microelectromechanical device.

12. (previously presented) The method of claim 9, wherein the step of preparing the coating agent further comprises:

preparing the coating agent such that after introducing the agent into the chamber, the agent forms a coating layer that is physically adsorbed on the surface of the microelectromechanical device.

13. (previously presented) The method of claim 9, wherein the step of preparing the coating agent further comprises:

preparing the coating agent that comprises a first and second coating components such that after introducing the coating agent into the chamber, the first component of the coating agent forms a coating layer that is chemically bonded to the surface of the microelectromechanical device, and the second component of the coating agent forms another layer that is not chemically bonded to the surface of the microelectromechanical device.

14. (original) The method of claim 1, wherein the step of introducing the cleaning agent into the chamber further comprises:

a) introducing a first component of the cleaning agent into the chamber such that the pressure inside the chamber is at a first pressure value; and

b) introducing a second component of the cleaning agent into the chamber such that the pressure inside the chamber is at a second pressure value that is higher than the first pressure value.

15. (previously presented) The method of claim 14, wherein the first pressure is from 1 Torr to 700 Torr.

16. (previously presented) The method of claim 14, wherein the second pressure is from 10 Torr to 5000 Torr.

17. (previously presented) The method of claim 14, further comprising:

lowering the pressure inside the chamber to a pressure less than the first pressure value;
and
repeating the steps a) and b).

18. (previously presented) The method of claim 14, wherein the first component of the cleaning agent comprises ozone gas and water vapor.

19. (previously presented) The method of claim 14, wherein the second component of the cleaning agent comprises ozone gas in the absence of water.

20. (previously presented) The method of claim 9, wherein the step of introducing the coating agent into the chamber further comprises:

a) introducing a first component of the coating agent into the chamber such that the pressure inside the chamber is at a first pressure value; and

b) introducing a second component of the coating agent into the chamber such that the pressure inside the chamber is at a second pressure value that is higher than the first pressure value.

21. (previously presented) The method of claim 20, further comprising:

pumping out the chamber before introducing the first or the second component of the coating agent into the chamber.

22. (previously presented) The method of claim 20, further comprising:

lowering the pressure inside the chamber to a value less than the first pressure value; and
repeating steps a) and b).

23. (previously presented) The method of claim 9, wherein the coating agent comprises an

organosilane.

24. (previously presented)The method of claim 9, wherein the coating agent is an organochlorosilane.

25. (previously presented)The method of claim 9, wherein the coating agent is a halogen-substituted organochlorosilane.

26. (previously presented)The method of claim 9, wherein the coating agent comprises perfluoropolyether.

27. (previously presented)The method of claim 9, wherein the coating agent is selected from a group comprising: a carboxylic acid material having the formula $\text{CF}_3(\text{CF}_2)_a(\text{CH}_2)_b\text{COOH}$, wherein a is greater than or equal to 0, and b is greater than or equal to 0; a fluorocarbon material having the formula $\text{C}_n\text{H}_m\text{F}_{(2n+2-m)}$, wherein n is greater than or equal to 1, and m is greater than or equal to 0 and less than $(2n+2)$; a fluorocarbon amine material having the formula $\text{N}(\text{C}_n\text{H}_m\text{F}_{(2n+1-m)})_3$ wherein n is greater than or equal to 1 and m is greater than or equal to 0 and less than $(2n+1)$; a fluorocarbon ether material having the formula $\text{O}(\text{C}_n\text{H}_m\text{F}_{(2n+1-m)})_2$ wherein n is greater than or equal to 1 and m is greater than or equal to 0 and less than $(2n+1)$.

28. (previously presented)The method of claim 9, wherein the temperature in the chamber is from 60°C to 300°C.

29. (previously presented)The method of claim 9, wherein the temperature in the chamber is from 100°C to 200°C.

30. (previously presented)The method of claim 9, wherein the pressure in the chamber is

from 1 Torr to 760 Torr.

31. (currently amended) A method for modifying a surface of a microelectromechanical device that is assembled within an assembly, the method comprising:

loading the assembly into a chamber;

preparing a gaseous modification agent; and

introducing the gaseous modification agent into the chamber such that the gaseous modification agent is delivered through a micro-opening of the assembly to the surface of the microelectromechanical device for modifying the surfaces of the microelectromechanical device, wherein the micro-opening is between a first substrate and a second substrate that is glass having a reflective and deflectable mirror plate formed thereon; wherein the micro-opening has a characteristic dimension around 10 micrometers or less.

32. (original) The method of claim 31, wherein the gaseous modification agent comprises a cleaning agent that cleans the surface after being introduced onto the surface of the microelectromechanical device.

33. (original)The method of claim 32, wherein the cleaning agent comprises ozone gas.

34. (original)The method of claim 33, wherein the cleaning agent comprises an oxygen-containing co-agent.

35. (original)The method of claim 34, wherein the co-agent comprises vapor water.

36. (previously presented)The method of claim 32, wherein the step of introducing the gaseous modification agent into the chamber further comprises:

introducing the gaseous modification agent into the chamber; and

introducing a coating agent into the chamber such that the coating agent is delivered through the micro-opening to the surface for coating the surface of the microelectromechanical device.

37. (original)The method of claim 36, wherein the coating agent forms a layer that is chemically bonded to the surface of the microelectromechanical device.

38. (original)The method of claim 36, wherein the coating agent forms a layer that is physically adsorbed on the surface of the microelectromechanical device.

39. (original)The method of claim 36, wherein the coating agent comprises a first component and a second component, wherein the first component forms a layer that is chemically bonded to the surface of the microelectromechanical device, and the second component of forms another layer that is not chemically bonded to the surface of the microelectromechanical device.

40-42. (cancelled)

43. (original)The method of claim 31, wherein the step of introducing the gaseous modification agent into the chamber further comprises:

a) introducing a first component of the modification agent into the chamber such that the pressure inside the chamber is at a first pressure value; and

b) introducing a second component of the modification agent into the chamber such that the pressure inside the chamber is at a second pressure value that is higher than the first pressure value.

44. (original)The method of claim 43, further comprising:

lowering the pressure inside the chamber to the first pressure or lower; and

repeating the steps a) and b).

45. (currently amended) A method for modifying a surface of a microelectromechanical device, the method comprising:

assembling the microelectromechanical device into an assembly that comprises at least two substrates, one of which is opaque to ultra-violet light;

loading the assembly into a chamber;

preparing a gaseous modification agent;

introducing the gaseous modification agent into the chamber for modifying the surface of the microelectromechanical device; and

wherein the temperature of the chamber is between 100 °C and 200 °C.

~~wherein the method is performed in the absence of an application of ultraviolet light.~~

46. (original)The method of claim 45, wherein the step of introducing the gaseous modification agent into the chamber further comprises:

introducing the agent onto the surface through a micro-opening of the assembly, wherein the micro-opening has a characteristic dimension around 10 micrometers or less.

47. (original)The method of claim 45, further comprising:

a) introducing a first component of the agent into the chamber such that the pressure inside the chamber is at a first pressure value; and

b) introducing a second component of the agent into the chamber such that the pressure inside the chamber is at a second pressure value that is higher than the first pressure value.

48. (original)The method of claim 47, further comprising:

lowering the pressure inside the chamber to a pressure that is equal to or lower than the first pressure value; and

repeating the steps a) and b).

49. (original)The method of claim 45, wherein the modification agent is a cleaning agent for cleaning the surface of the microelectromechanical device.

50. (original)The method of claim 49, wherein the cleaning agent comprises ozone gas and vapor water.

51. (original)The method of claim 49, wherein the cleaning agent comprises ozone gas in the absence of water.

52. (original)The method of claim 45, wherein the modification agent comprises a coating agent for coating the surface of the microelectromechanical device.

53. (original)The method of claim 52, wherein the coating agent forms a layer that is chemically bonded to the surface of the microelectromechanical device.

54. (original)The method of claim 52, wherein the coating agent forms a layer that is physically adsorbed to the surface of the microelectromechanical device.

55. (original)The method of claim 52, wherein the coating agent comprises a first and second component, said first component being chemically bonded to the surface of the microelectromechanical device, and said second component being not chemically bonded to the surface of the microelectromechanical device.

56. (original)A method for modifying a surface of a microelectromechanical device in an assembly, the method comprising:

loading the assembly into a chamber; and
introducing a gaseous modification agent into the chamber such that the agent is delivered through an opening of the assembly to the surface of the microelectromechanical device, further comprising:

a) introducing a first component of the agent into the chamber at a first pressure; and

b) introducing a second component of the agent into the chamber at a second pressure that is higher than the first pressure.

57. (original)The method of claim 56, further comprising:

pumping out the chamber such that the pressure inside the chamber is equal to or less than the first pressure; and

repeating the steps a) and b).

58. (original)The method of claim 56, wherein the modification agent comprises a gaseous cleaning agent for cleaning the surface.

59. (original)The method of claim 58, wherein the first component of the cleaning agent comprises vapor water and ozone gas.

60. (original)The method of claim 58, wherein the second component of the cleaning agent comprises ozone gas in the absence of vapor water.

61. (original)The method of claim 56, wherein the modification agent comprises a coating agent for coating the surface.

62. (original)The method of claim 61, wherein the coating agent forms a layer that is

chemically bonded to the surface of the microelectromechanical device.

63. (original)The method of claim 61, wherein the coating agent forms a layer that is physically adsorbed to the surface of the microelectromechanical device.

64. (original)The method of claim 61, wherein the coating agent comprises first and second component, said first component forming a layer that is chemically bonded to the surface, and said second component forming a layer that is not chemically bonded to the surface.

65-83. (cancelled)

84. (new) The method of claim 1, further comprising:
preparing a co-agent that comprises oxygen-containing molecules; and
introducing the co-agent into the chamber.

85. (new) A method comprising:
loading a microelectromechanical device into a chamber;
introducing a first cleaning agent into the chamber for cleaning a surface of the microelectromechanical device in the chamber, wherein the chamber has a first pressure;
introducing a second cleaning agent into the chamber for cleaning the surface of the microelectromechanical device in the chamber, wherein the chamber has a second pressure that is different from the first pressure; and
wherein the method is performed in the absence of an application of ultraviolet light.

86. (new) The method of claim 85, wherein the first cleaning agent comprises ozone gas.

87. (new) The method of claim 85, wherein the second cleaning agent comprises ozone gas.

88. (new) The method of claim 85, wherein the first and second cleaning agent both comprise ozone gas.

89. (new) The method of claim 85, wherein the temperature of the chamber is between 100 °C and 200 °C.